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ABSTRACT

Data that were originally gathered during the 1978-1990, 1994, and 1996 Scottish School Leavers Surveys were subjected to a secondary analysis to identify the qualifications, characteristics, and choices of high-attaining female school leavers. The following were among the key findings of the analysis: (1) on average, young women from all social backgrounds had higher attainment than did young men with the same social background; (2) no evidence was found that the gender gap varied between schools; (3) compared with young men, young women had higher average standard grade attainment and were more likely to remain in school after age 16; (4) having friends who took school seriously was related to high attainment, and more young women than young men had peer groups that took school seriously; (5) gender differences in subject choice emerged in S5/S6, after subject choices are no longer restricted; (6) like lower-achieving students, high-attainers showed traditional gender-specific preferences for certain subjects in S5/S6; (7) high-attaining young women were less likely to enter higher education than were higher-attaining young men, although they were equally likely to apply; and (8) the issues involved in redressing gender inequality for young women differ from those for young men. (Contains 18 references.) (MN)

Scottish School Leavers Survey High-attaining Female School Leavers

Scottish School Leavers Survey
Special Report III

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Making it Work Together

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High-attaining female school leavers

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Introduction

In recent years the focus of policy concern about gender and attainment has shifted from the relative disadvantage of girls to the perceived 'underachievement' of boys. Nevertheless, while the average school attainment of young women has overtaken that of young men, this advantage is not always carried forward into entry to Higher Education or employment. In this report we focus on female high-attainers, and examine aspects of their qualifications, characteristics and choices which may contribute to continuing gender inequality. This is one of a series of special studies based on the Scottish School Leavers Surveys (SSLS) commissioned by the Scottish Executive Education Department (SEED) and conducted by the Centre for Educational Sociology (CES) at the University of Edinburgh.

Key findings

In our research, we found that:

- ◆ twenty-eight per cent of female and 24 per cent of male school leavers had four or more Highers awards at A-C in 1994
- ◆ young women from all social backgrounds had higher attainment on average than young men with the same social background
- ◆ there was no evidence that the gender gap varied between schools
- ◆ young women had higher average Standard Grade attainment than young men, and were more likely to stay on at school after age 16
- ◆ among students who stayed on, young women and young men of equivalent Standard Grade attainment were equally likely to become high-attainers. Young women and young men made similar progress, on average, during S5/S6
- ◆ having friends who took school seriously was related to high attainment, and more young women than young men had peer groups that took school seriously
- ◆ gender differences in subject choice are restricted in S4 by the Curriculum Framework, but emerge at later stages of education
- ◆ in S5/S6 high-attainers showed traditional gender-specific preferences for certain subjects, as did other young people
- ◆ the majority of high-attainers went on to full-time study after school

- ◆ high-attaining young women, however, were less likely to enter Higher Education than high-attaining young men although they were equally likely to apply
- ◆ the issues involved in redressing gender inequality for young women differ from those for young men.

Background

Prior to the passage of the Sex Discrimination Act 1975, girls were less likely than boys to leave school with formal qualifications (Powney, 1996). Almost twenty-five years later, this situation has reversed. Girls are now more likely to stay on at school beyond the age of 16, and to leave school with better qualifications than boys. Levels of attainment have increased for both boys and girls since the late 1970s, but the rate of improvement has been faster for girls, resulting in a substantial gap in attainment between young men and young women in 1997. Almost half of female pupils left school in that year with Highers, compared with about 40 per cent of young men (SOEID, 1998a). Where policy-makers, educationalists and researchers were previously concerned with the relative disadvantage of girls in education, their focus has now shifted to the 'underachievement' of boys.

The fact that young women tend to attain higher than young men at school should be treated with some caution, since this conclusion is based on average performance. Some girls are still underachieving, just as some boys are doing well. It has been well documented, for example, that working-class pupils of both sexes tend not to do so well at school as their middle-class peers (Paterson, 1992).

Undoubtedly a broader range of choices and opportunities is now available to women – this is evident from the increasing numbers of women who have entered the workforce over the past 20 years (EOC, 1997). However, gender differences remain. Girls and boys are still inclined to take different subjects at school even within the constraints of the Scottish Curriculum Framework (Croxford, 1996). They are also inclined to aspire to gender-stereotyped careers (Furlong and Biggart, 1999) and, on leaving school, to go into gender-specific areas of work and training (EOC, 1997). Women's average income was still only 80 per cent of men's in 1997 (EOC, 1998).

One might expect the experiences of high-attaining young women to be different from those of other young women, their good qualifications providing a passport to a broader range of choices and opportunities. There has been little research focusing on young women's high attainment and, in Scotland, little research of any kind specifically addressing the area of gender and education (Powney, 1996). This report goes some way to redressing that balance.

The Scottish School Leavers Survey

The findings reported here are based on secondary analysis of data from the Scottish School Leavers Survey (SSLS). The SSLS was conducted every two years between 1976 and 1990 by the CES, in partnership with the Scottish Office, the Economic and Social Research Council (ESRC, formerly SSRC), and other sponsors. Since 1992 it has been carried out by the National Centre for Social Research (NCSR, formerly SCPR), funded by the SOEID (now SEED) with additional support in 1993 from Strathclyde Regional Council (Lynn, 1995).

Each survey was conducted by post, using a questionnaire of up to 16 pages. Most surveys covered a 10 per cent sample of school leavers from all secondary schools, except special schools, in Scotland. Response rates to all surveys were generally high: between 70 per cent and 80 per cent, except in 1990 when the response rate was 56 per cent. Each survey was carried out in the spring following the session in which the young people left school. For clarity, years quoted refer to the year of leaving school, and not the year of the survey.

In 1997, the design of the survey was changed and a 10 per cent cohort of young people who were in S4 in 1996 were surveyed rather than a sample of school leavers. This cohort has been followed up this year (1999) and will be followed up again in 2001 at age 20/21.

The most recent SSLS data available for this research came from the surveys of 1994 leavers and the cohort of 1996 S4 pupils. Data from the surveys of 1978 to 1990 are also used, from the Trends dataset held at CES.

Definition of high attainment

High attainment is defined as the attainment of four or more Higher Grade passes at A-C by the time of leaving school. The minimum entry requirement for higher education is usually three Highers, and so we selected people who had achieved four or more Highers, which allowed us to investigate students who achieved higher than the norm. In addition, approximately one quarter of the most recently available survey sample are designated as high-attainers by this definition, providing a sufficient sample size for the analyses undertaken.

Rising levels of attainment

In 1994, 28 per cent of female pupils left school with four or more Highers passes at grades A-C compared with 24 per cent of young men. Figure 1 shows that there has been a gradual increase in the proportions of young people leaving school with four or more Highers since the late 1970s, with a more rapid increase since the late 1980s. It also shows that girls did better than boys in most years. But only in 1990 and 1994 was the gap significantly different.

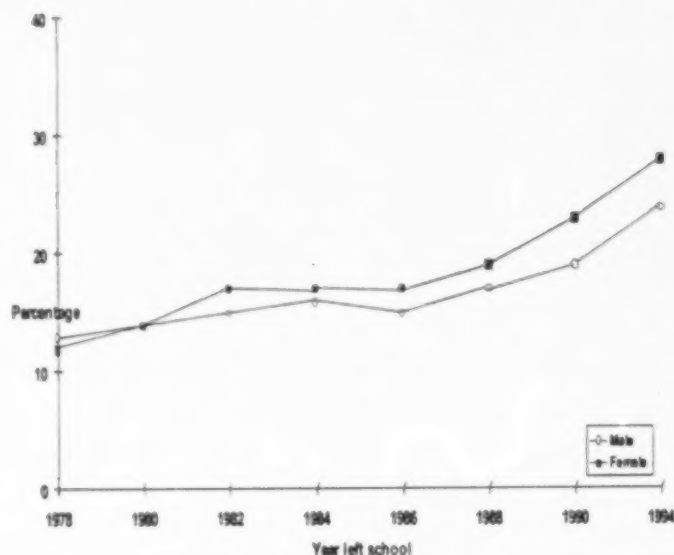
High attainment is strongly related to social advantage.

What can be done to redress the effects of social inequality?

The gender gap in attainment is established before Standard Grade and reinforced by differences in staying-on rates of young men and young women.

What are the implications for schools and careers advisers?
How can boys be encouraged to improve their attainment at Standard Grade?
How can boys be encouraged to stay on at school?

Figure 1: Percentage of school leavers with four or more Highers passes



Factors relating to high attainment

There is a strong relationship between socio-economic advantage and high attainment. Young people with fathers in non-manual occupations, those with more educated and/or home-owning parents and those at independent schools had several advantages over their peers. To begin with, they tended to do better in S4. S4 attainment was a strong predictor of later attainment, and one might have expected that those with equivalent Standard Grades would have gone on to do equally well later on. However, those in socially advantaged circumstances were even more likely to stay on at school and to become high-attainers in the upper secondary school than others with equivalent S4 qualifications.

While social advantage was strongly related to high attainment, it did not explain why young women were more likely to become high-attainers than young men, since young women from all social backgrounds did better than young men in equivalent circumstances. The female advantage in S5/S6 was partly explained by young women having higher Standard Grade attainment, and partly due to the fact that they were more likely to stay on beyond S4. Boys and girls were equally likely to convert their S4 Standard Grades into high attainment later, and those who chose to stay on were equally likely to become high-attainers. This means that the female advantage was established in S4 and carried on into S5/S6, rather

than that the performance of young men or young women was accelerating or decelerating in the upper secondary school.

The survey asked young people whether their friends took school seriously. Their responses suggest that more young women than young men had peer groups which took school seriously, and that young people whose friends took school seriously were more likely to be high-attainers. Other research (Adler *et al.*, 1992) has shown that there is an 'achievement ceiling' for boys beyond which they risk becoming unpopular with other boys, while conversely, academic success is valued by girls. This may offer some explanation for the relative under-achievement of boys. If this is true, boys who do well at school have to transcend the pressures of their peer group culture in order to succeed. Additional research is required to explore this hypothesis more fully.

Further questions concerned the extent to which parents showed interest in the young people's education, including visits to the school to discuss progress. Parental interest was related to high attainment, although somewhat differently for young men and young women. While the parents of high-attainers tended to visit schools more often to discuss progress, the parents of high-attaining young women seemed to take a particular interest in their daughters' progress. Among non-high-attaining pupils, the parents of male children visited more often than those with female children. This suggests that, when children are not doing so well, parents are more concerned about their sons' progress than their daughters'. We may conjecture that some of the latter visits may have been requested by the school to discuss behavioural problems

School differences

There were significant differences between schools relating to the probability of their pupils becoming high-attainers, staying on beyond S4 and converting S4 attainment into later high attainment. This was true after taking account of pupils' characteristics and S4 qualifications and type of school, and suggests that there is scope for improvement in some schools. However, when pupils' characteristics were taken into account, there was no evidence of variation between schools in the attainment gender gap. This suggests that the factors affecting gender differences in attainment are found equally in all schools.

Subject choice

The Curriculum Framework has tempered gender differences in subject choice in S3 and S4 to some extent because all pupils are now required to study core subjects, i.e. English, mathematics, science subjects, social subjects and other languages. However, gender differences emerged in S5 and S6 when pupils had greater freedom of choice. Figure 2 displays the proportions of young men and young women who passed Highers/CSYS in different subject areas in 1994. Young

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Part of the explanation for the gender difference relates to the attitudes to school expressed by high-attaining school leavers.

How can pupils' attitudes to school be improved?

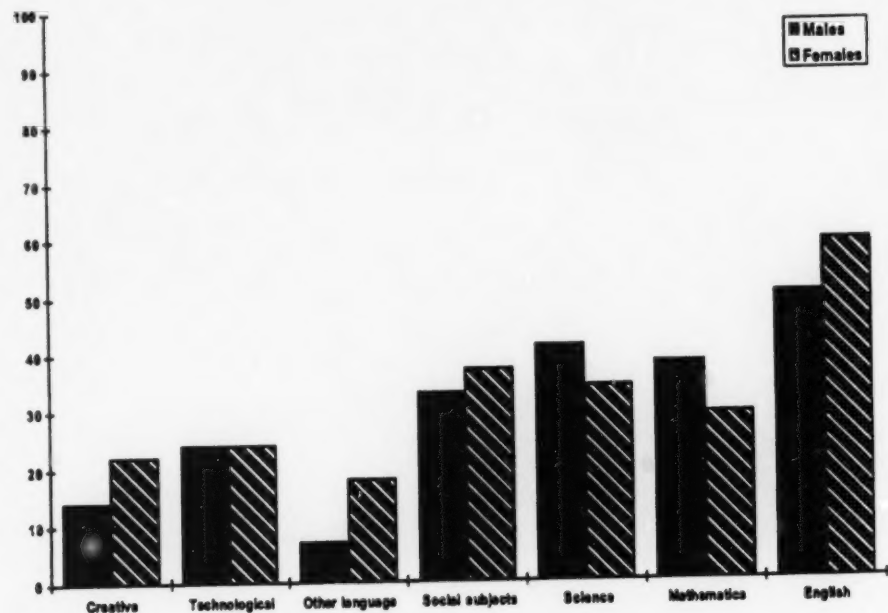
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Among high-attaining school leavers there are now more young women than young men.

What are the implications for schools, careers advisers, higher education institutions and employers?

women gained more Highers/CSYS passes in English, foreign languages and creative subjects, while young men gained more in science subjects and mathematics. It was only in technological subjects and social subjects where there were no significant gender differences. The chart only shows SCE qualifications, however, and some young people may have gained SCOTVEC modules, especially in the more vocationally oriented subjects.

Figure 2: Percentage of young men and young women who gained Higher Grade/CSYS passes in different subject areas in 1994



(Those who stayed on to S5 only: young men, N=1024; young women, N=1261)

Social class differences in subject choices were more marked for female high-attainers than for young men. Middle-class girls were even more likely to take English and other languages, while working-class girls preferred social and technological subjects.

The research literature offers possible explanations for the reported gender differences in subject choice. The main reason given by young people themselves for choosing subjects to study at 16-plus is interest in the subject, followed by relevance to their chosen careers and being good at the subject (Keys *et al.*, 1998). Girls and boys favour different learning styles and excel in different types of assessment tasks, and subjects differ in the teaching styles and assessment methods used (Arnot *et al.*, 1999). All of these factors may be interconnected, for

example, young people may be interested in the subjects they are good at and good at subjects which are delivered in ways that they prefer. It could be that for some subjects that are conditioned by gender attitudes and values within society, young people have a broader interest that transcends aptitude or style of delivery.

Whatever the explanation, young peoples' subject choices have a significant impact on the opportunities available to them later. This is illustrated in a very real sense by recent research which showed that those with A level mathematics (at whatever grade) went on to earn up to 10 per cent more than others with similar characteristics and qualifications. This was true even when particular mathematics-related careers were removed from the equation (Dolton and Vignoles, 1999). Thus while the qualifications of high-attaining young women may appear similar to those of young men in many ways, young women's preference for language and creative subjects is likely to lead to lower returns financially later on in the labour market.

Post-school destinations

In broad terms, the immediate post-school destinations of male and female high-attainers were very similar in 1994. The majority went on to further full-time study directly from school and most of the rest went into full-time employment. Further investigation, however, revealed important gender differences.

In *Scottish School Leavers Entering Higher Education* (Tinklin and Raffe, 1999a), in this series, we reported that, although young women were performing better at Highers level in 1993, they were less likely than young men with equivalent qualifications to go on to higher education after leaving school. This was in spite of the fact that they were equally likely to apply to higher education courses. Table 1 shows that the same is true of high-attaining young men and young women. They were equally likely to apply to higher education courses, with most applying to do degrees. But female high-attainers were less likely to start higher education courses than young men. One possible explanation for the difference in entry rates is that young women tended to apply to more over-subscribed courses, but we cannot test this using the data available. It is also possible that fewer young women than young men took up places offered.

SSLS

There are continuing gender differences in subject choice which have an impact on future career possibilities.

Are there implications for teaching and learning styles and assessment methods to make all subjects suited to the learning styles of both young men and young women? Should there be less opportunity for subject choice? Or, better advice on the long-term implications of subject choice?

Table 1: Applications and entry to further study by high-attainers 1993*

	Applications		Courses started	
	Male	Female†	Male	Female**
Degree	58	85	83	73
Other HE	6	7	8	8
Non-advanced	2	3	3	6
None	4	6	7	13

* Highest level course applied for. † Not significantly different. ** Significantly different at $p < 0.01$ level.

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High-attaining young women were less likely to enter higher education than high-attaining young men in spite of being equally likely to apply.

What are the implications for schools, careers advisers and higher education institutions? Is there need for further research?

Recent official statistics indicate that, in the years since 1993, the number of young women aged from 17 to 21 participating in higher education has overtaken that of young men in the same age range (SOEID, 1998b). However, it is not clear from these statistics whether female entrance rates now match their qualification levels.

There was evidence of marked gender differences in subject choice at degree level, with young men opting for more stereotypically 'male' subjects such as engineering and technology, maths and computing and young women choosing more people-oriented subjects such as education, languages and biological sciences (SOEID, 1998c).

Discussion

On the surface the qualifications and first destinations of high-attaining female and male school leavers appeared very similar. They left school with broadly similar average qualifications and most of them went on to further full-time study. However, that is as far as the similarity goes. Young men and young women of all attainment levels tended to choose different subjects in S5 and S6 and this had an important impact on their later attainment and opportunities. The issues of redressing gender inequality are therefore different for young women and young men. For boys the emphasis needs to be on finding ways to raise their S4 attainment and thereafter encouraging them to stay on at school. While for girls the focus needs to be on their post-16 choices and on raising their awareness of the implications of their subject choices.

There was evidence to suggest that gender differences in subject choice at school have an important impact on later attainment and opportunities. High-attaining young women were less likely to start degree courses, even though they were equally likely to apply. This could have been because they were more likely to apply to over-subscribed courses. This can only be ascertained through further research. There was evidence to suggest that young women were less likely to gain first class honours because they were over-represented on courses where fewer firsts were awarded (McNabb *et al.*, 1998). Furthermore, subject choices have an influence on the range of job opportunities available later and go some way to explaining the female: male wage differential.

One way to address gender differences in subject choice in S5 and S6 would be to reduce the level of choice available to young people during those stages. However, the experience of the Curriculum Framework suggests that gender differences in subject choice might then simply emerge later at the point of entry to higher education, or at other points where choice was available. For example, all pupils might take a science subject, but girls might opt for biology, while boys opted for physics.

The fact that gender differences in subject choice appear in the upper secondary school, after all pupils have been required to take the same range of subjects in S4, indicates that young people are still being influenced by the learning styles of different subjects. It also suggests that the notion of 'appropriateness' of different subjects and occupations for young women and young men still has an influence over choice. Some measures have been taken to address this, for example, the WISE (women into science and engineering) initiative and initiatives in some schools to provide pupils with role models (either teachers or outsiders) of women or men in non-traditional careers or subject areas. However, there is clearly still some way to go before attitudes change.

The findings also suggest that the provision of support and information to pupils throughout their school careers on the potential impact of their subject choices on later opportunities and earnings potential could be useful. However, research has shown that the most popular reason given by pupils for their subject choices was interest in the subject. Earnings potential was not high up the list for most young people, although relevance to a chosen career did come second (Keys *et al.*, 1998). This suggests that those who have chosen to stay on at school at age 16 are prioritising interest and satisfaction over longer-term financial gain.

The relationship between social advantage and attainment has been well documented and has persisted over time. Of most concern is the evidence that disadvantage has a 'snowball' effect. Differences in attainment by social background emerge as early as Primary 1 (Croxford, 1999). By S4, children from less advantaged backgrounds are doing significantly less well than their peers. They are then less likely to stay on at school, less likely to convert their Standard Grades into Highers, less likely to apply to higher education and once they have applied, less likely to start courses than others with equivalent qualifications (Tinklin and Raffe, 1999b). This report demonstrates that students from socially disadvantaged backgrounds with good Standard Grade results are less likely to become high-attainers than would be predicted by their S4 attainment. The Early Intervention Programme is trying to address these inequalities in the early years. But clearly the attention of policy-makers and schools should focus on reducing inequality at all stages of the educational process. The findings of this research also highlight the need to ensure that socially disadvantaged students with good Standard Grades achieve their potential for later high attainment and higher education.

While social advantage is strongly linked to high attainment, it does not shed any light on the female advantage in attainment. Working-class young women did better than their male counterparts, just as middle-class girls attained higher than middle-class boys. Young women at independent schools and at local authority schools did better than their male peers.

The only factor that goes some way towards 'explaining' male and female differences in attainment was the evidence that girls took school more seriously than

boys. This accorded with other research findings which showed that high-attaining boys can suffer at the hands of their peer group. This peer-group pressure may well be creating a ceiling on boys' achievement, and may explain their relative underperformance compared with girls. Further research is needed to establish whether this is indeed the case. A current project at the CES (*Gender and Pupil Performance*, due to report at the end of 2000) will focus on this and other factors influencing gender differences in performance.

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The views expressed in this paper are those of the authors and do not necessarily reflect those of the Scottish Executive which funded the study.

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